

**CALIFORNIA DEPARTMENT OF TRANSPORTATION  
DUTY STATEMENT**

<b>CLASSIFICATION TITLE</b> Structural Design Technician I	<b>DISTRICT/DIVISION/OFFICE</b> DES/ Structure Design	
<b>WORKING TITLE</b> Detailer	<b>POSITION NUMBER</b> 559- 220 -3038-XXX	<b>EFFECTIVE</b> 11/7/02

**As a valued member of the Caltrans team, you make it possible for the Department to improve the mobility across California by being innovative and flexible; reporting to work regularly and on time; working cooperatively with team members and others; and treating others fairly, honestly and with respect. Your efforts are important to each member of the team, as well as those we serve.**

**GENERAL STATEMENT**

This is the entry and first journey level of the series. Under the direct supervision of a Senior Bridge Engineer and/or lead person, incumbent prepares simple drawings and assists in the preparation of complete design, construction, and as-built drawings for a variety of structures.

**TYPICAL DUTIES**

Duties include but are not limited to:

Percentage      Job Description

Essential (E) / Marginal (M)

45% (E)      Assists engineers in the preparation of a complete set of construction contract drawings for a variety (e.g.: concrete, steel, masonry and timber) of average difficulty structures (e.g.: retaining walls, soundwalls and simple span bridges) from engineer's design notes and sketches, by using state-of-the-art technology, i.e.: Computer-Aided-Drafting/Design (CADD) and related programs to assist in the development of details, layout and geometric design and to assist in electronically submitting plans to Office Engineer.

Assists engineers in the geometric design of average difficulty and prepares simple drawings (e.g.: retaining walls, soundwalls and bridge typical sections) based on data supplied by District and/or engineer's design notes and sketches.

25% (E)      Makes engineering calculations as required for horizontal and vertical alignment and dimensions for layout of average difficulty structures based on data supplied by the District and/or engineer's design notes and sketched.

15% (E)      Makes preliminary layouts of various types of structures for planning studies using CADD and related computer programs.

10% (E)      Calculates and checks quantities for preliminary estimates of structure costs based on the General Plan and final estimates of structure costs based on set construction contract drawings.

5% (M)      Completes as-builts corrections either by hand-drafting or uses state-of-the-art technology (i.e.: CADD based on data supplied by the Structure Construction Representative and the Project Engineer.

**SUPERVISION EXERCISED OVER OTHERS**

This position does not supervise other employees.

**KNOWLEDGE, ABILITIES AND ANALYTICAL REQUIREMENTS**

Knowledge of: Common details, methods of layouts used in the preparation of structural design, construction drawings and as-builts for a variety of structures of average difficulty; basic engineering mathematics; simple quantity estimates; state-of the-art technology, i.e., CADD and related computer programs used to determine layout, detail drawings and create geometric design for various types of structures.

Ability to: Communicate both orally and in writing; follow oral and written directions; draft neat, accurate and legible plans of average difficulty; interpret sketches, drawings and plans encountered in the work; prepare and

check quantity estimates; use state-of-the art technology, i.e., CADD, and related computer programs; assist in performing geometric design of average difficulty; make basic engineering calculations; plot data from field notes; prepare charts and graphs; use of mathematical calculations and interpretation of the survey notes and computer alignment output in preparing General Plans, site data and locating specific abutments and bents.

Analytical Requirements: Use of trigonometric calculations and interpretation of the survey notes and computer alignment output in preparing General Plans, site data and locating specific abutments and bents. Must be informed in regard to information available from standards.

**CONSEQUENCE OF ERROR/RESPONSIBILITY FOR DECISIONS**

The incumbent exercises judgement in the selection of views and standard plans and details used in the preparation of a complete set of plans, which could result in incomplete information in the contract plans and estimates. Incomplete information in the contract plans and estimates could result in unnecessary rework, increased cost and time to produce correct plans, and possible delay of the project.

**PUBLIC AND INTERNAL CONTACTS**

Employee maintains communications, generally through the Project Engineer, with various personnel working on the project to which he/she is assigned, including other Department personnel, engineering consultant and industry representatives to transmit or obtain relevant engineering information. These contacts will be verbal or written, to perform one's assignments.

**PHYSICAL, MENTAL AND EMOTIONAL REQUIREMENTS**

May be required to sit for long periods of time using keyboard and mouse. May also be required to lift/move/carry large or cumbersome plans (maximum of 50 pounds). May be required to lift/move/carry various types of portable equipment, which may weigh up to 50 pounds, around the work site or when out in the field.

**WORK ENVIRONMENT**

Employee will work in a climate-controlled office under artificial lighting. Employees may also be required to travel to job site and may be exposed to dirt, noise, uneven surfaces and/or extreme heat or cold.

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I have read, understand and can perform the duties listed above. If you believe you may require accommodation, please discuss this with the hiring supervisor.

\_\_\_\_\_  
EMPLOYEE (Print Name)

\_\_\_\_\_  
EMPLOYEE SIGNATURE

\_\_\_\_\_  
DATE

I have discussed with and provided a copy of this duty statement to the employee named above.

\_\_\_\_\_  
SUPERVISOR (Print Name)

\_\_\_\_\_  
SUPERVISOR SIGNATURE

\_\_\_\_\_  
DATE